

TRIGONOSCUTOIDES TEXANUS (NEW GENUS,
NEW SPECIES) FROM TEXAS SAND DUNES
(TANYMECINAE: CURCULIONIDAE: COLEOPTERA)¹

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ABSTRACT

Trigonoscutoides texanus, a new nocturnal weevil from northwest Texas collected mainly in the spring, is associated with shin oak (*Quercus* sp.). Adults are compared with *Trigonoscuta* and *Miloderoides*. The adult characters shared by *Trigonoscutoides* and *Trigonoscuta* are probably due to convergence, since the members of both genera burrow in sand. The new genus has numerous characters that distinguish it from *Trigonoscuta*, indicating at most a distant relationship. The new genus and species are described, male and female genitalia are illustrated, and a habitus photograph is included.

While identifying weevils in the Ohio State University collection I found a single specimen of this interesting new genus and species, so when I moved to Texas in 1970 I went to the sand dune area near Monahans in Ward County to try to collect more and to look for host information. I collected long series at several localities by sifting sand under shin oak (*Quercus* sp.). Weevils were 3" to 12" below the surface, only in areas where the shin oak grew.

On a later trip specimens were taken at night, walking on the sand and feeding on the shin oak. The emergent vegetation of the oak is 1 to 3 feet tall, with extensive rhizomes and branches under the sand dunes. Apparently these nocturnal weevils are active as adults in the spring. Frequent trips to the same localities in the summer, fall, and winter were all unsuccessful, but spring collecting was successful for several years. However one specimen was collected in June and one in early July, by other collectors, so at least some individuals are active during the summer.

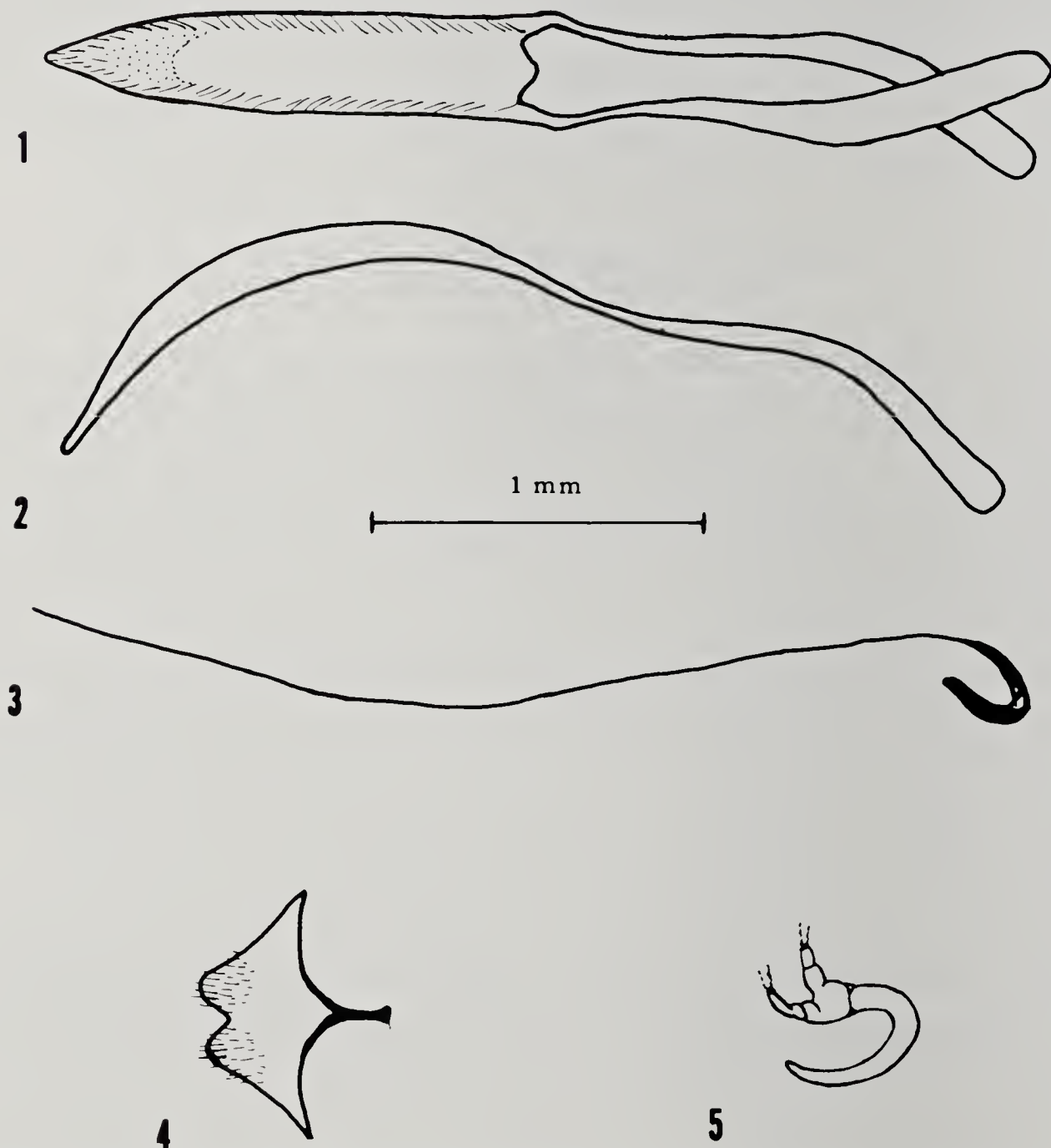
Larvae were not collected despite numerous attempts. It is probable that they feed on roots and may be very deep in the sand. The dense lattice-work of oak rhizomes and branches under the sand makes deep digging very difficult, and I did not wish to destroy large areas of oak.

¹This study was supported in part by grants from the Cooperative State Research Service, United States Department of Agriculture, Grant Numbers 716-15-22 and 416-15-16 to Florida A and M University.

Trigonoscutoides O'Brien, **new genus**

Rostrum subquadrate, separated from frons by shallow but distinct transverse groove between anterior margin of eyes; nasal plate steeply angled to perpendicular, hind margin sharply carinate. *Antenna* short, scape scarcely reaching prothorax, with dense recumbent scales and erect setae. Funicle 7 segmented, basal segments with recumbent scales and erect setae, apical segments with scales replaced by coarse recumbent setae; club short, oval, densely pubescent. *Scutellum* large, broad and triangular. *Apterous*; humerus rounded; striae not visible.

Fore coxae contiguous, mid coxae narrowly separated, hind coxae, widely separated. Metepisternal suture not visible. Suture between abdominal segments 1 and 2 strongly arcuate at middle; segment much longer than 2, 2 longer than 3 and 4 combined, 3 and 4 subequal, 5 longer than 3 or 4. *Femora* strongly clavate, unarmed. Fore and mid tibiae uncinatae, hind tibia produced in a long apical outer process, anterior margin somewhat acute, entire tibia flattened, rather bladelike. Corbel area of hind tibia open, strongly convex, clothed with dense recumbent scales and dense subacute strong subrecumbent to suberect spines. Third tarsal segment bilobed; claws free, simple.



Figs. 1-5, *Trigonoscutoides texanus*: 1) male, phallus, dorsal view; 2) male, phallus, lateral view; 3) male, flagellum, lateral view; 4) female, 8th sternite, dorsal view; 5) female, spermatheca, lateral view.

Type-species. *T. texanus* new species, by monotypy.

Several of the characters listed above will readily separate this genus from all other North American Tanymecinae. The strongly convex corbel area with the dense, coarse, subacute spines is unique in the subfamily. In *Trigonoscuta* the corbel is closed and concave, usually lacking spines. The corbel of *Miloderoides* is at most weakly convex with sparse, very short, blunt spines. The apical process of the fore tibia of *Trigonoscutoides* is acute and very elongate (ca. 2 to 3 times as long as broad), whereas in *Trigonoscuta* the process is usually blunt and seldom much longer than broad. *Miloderoides* lacks any process. The distinct sloping nasal plate with carinate posterior margin readily separates this new genus from *Trigonoscuta* and *Miloderoides*, both of which have a flattened, poorly defined nasal area, without a carinate margin. The adult characters imply a relationship with *Trigonoscuta*, but the morphological similarity is probably due mainly to convergence since both genera burrow in sand. The new genus has numerous characters that distinguish it from *Trigonoscuta*, and these indicate at most a distant relationship.

Trigonoscutoides texanus O'Brien, **new species**
(Fig. 1-6)

Type-locality. Texas, Winkler Co., 4.5 mi. N.E. Kermit [Hwy. 115].

Holotype male. Length of pronotum + elytron, 5.6mm. Black to reddish brown; body robust, elongate oval, convex, densely clothed with white, grey and brown recumbent irregularly shaped scales, and erect to suberect fine setae, finely subgranulate between scales.

Rostrum convex in basal 2/3 with weak median poorly defined depression, apical 1/3 concave to flattened, frons broad, flattened, convex, not imbricate, shining scales and dense, fine suberect setae; nasal plate and carina subglabrous, lacking scales, with sparse curved setae; lateral margin of rostrum at apex subdentate. Scrobe lateral, cavernous, visible in part from above, anterior margin sharply defined, posterior margin poorly defined, directed towards lower margin of eye; pterygia slightly projecting anteriorly. *Antennal scape* with dense, not imbricate, recumbent, shining scales, and long, fine erect setae; segments 1 through 5 with such scales and setae, 6 and 7 without scales, bearing only coarse recumbent setae and erect fine setae; segment 1 slightly longer than 2, 1 subequal to 3, 4 and 5; 6 and 7 gradually larger; club short, oval, subequal to segment 1. *Prothorax* transverse, sides strongly rounded, sharply constricted apically, weakly tubulate; anterior margin straight, with distinct postocular vibrissae; scales and setae as on head; posterior margin with elongate plumose scales (often rubbed or greased). *Elytra* widest behind humeri, gradually narrowing to broadly rounded apex; scales in part imbricate, arranged in alternate longitudinal, irregular lines of whitish and brownish; dorsal scales shining, normal; lateral margins in large part with plumose scales. *Venter* and coxae clothed mainly with plumose scales, setae longer than on dorsum. *Metasternum* and 1st abdominal segment broadly distinctly concave, 2nd segment flattened basally, weakly convex apically. *Legs* clothed with dense recumbent shining scales and very long fine erect setae; femur with imbricate scales; tibia with scales touching, not imbricate; tarsi dorsally with imbricate scales; ventrally 3rd tarsal segment of all legs with apical pubescent pad, smaller pads on segments 1 and 2 of fore tarsi only.

Allotype female. Length of pronotum + elytron, 6.7mm. Very similar to male, metasternum weakly convex, nearly flat at middle; 1st and 2nd abdominal segments convex.

Range. Known only from sand hills of Ward and Winkler Counties in north-west Texas.

Holotype male and allotype female. TEXAS, Winkler Co., 4.5 mi. N.E. Kermit, 20-IV-1970, L. and C. W. O'Brien, sifting sand under shin oak (deposited in the author's collection).

Paratypes. TEXAS: Ward Co., 1 mi. E. Monahans, 28-III-1970, L. and C. W. O'Brien * (13); 2 mi. E. Monahans, 28-III-1970, L. and C. W. O'Brien * (13); 4 mi. N.E. Monahans, 12-VI-1966, D. Larson and W. Sharp (1); Sand Hills, 8-VII-1968, W. E. and C. A. Triplehorn (1); Winkler Co., 4 mi. E. Kermit, Hwy. 115, 26-III-1972, C. W. O'Brien and G. B. Marshall * (33), beating shin oak at night (4), sweeping shin oak at night (6), sifting sand (15); 4.5 mi. N.E. Kermit, 20-IV-1970, L. and C. W. O'Brien * (111); 6 mi. S. Kermit, 20-IV-1970, L. and C. W. O'Brien * (1); 10 mi. N.E. Kermit, 20-IV-1970, L. and C. W. O'Brien * (7) (* = sifting sand under shin oak).

Paratypes are deposited in the following collections: British Museum (Natural History), London; author's collection, Tallahassee, FL; E. L. Sleeper, Long Beach, CA; Florida State Collection of Arthropods, Gainesville, FL; Anne Howden, Ottawa; Ohio State University, Columbus, OH; Texas A & M University, College Station, TX; Texas Tech University, Lubbock, TX; and National Museum of Natural History, Washington, D.C.

Specific variations and comparative notes. There were 202 specimens on hand for this study. They range in size from 3.9 to 7.0 mm. Although most of the specimens have the lineate color pattern of the type, I have a few specimens with a uniform grey or whitish scale color. Many of the specimens are greased, making the plumose scales very difficult to see. The scutellum is convex in some individuals and flat in others and in unrubbed specimens is densely clothed with plumose scales. Several of the specimens collected at the type locality on April 20, 1970 are teneral (soft and of pale tan color), indicating very recent emergence.



Fig. 6, *Trigonoscutoides texanus*: 6) dorsal view.

